PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re:	Pu Zhou	Confirmation No.:	9310
Serial No.:	10/615,651	Examiner:	Monica A. Huson
Filing Date:	July 9, 2003	Group Art Unit:	1732
Docket No.:	1001.1662101	Customer No.:	28075
For:	METHOD OF FORMING CATHETER DISTAL TIP		

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P.O. Box 1450
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REPLY BRIEF UNDER 37 C.F.R. §41.41

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By Kathleen L. Boekley
Kathleen L. Boekley

Dear Sir:

Pursuant to 37 C.F.R. §41.41, Appellant hereby submits this Reply Brief in response to the Examiner's Answer mailed July 11, 2007.

Remarks begin on page 2 of this paper.

REMARKS

The following remarks are submitted after carefully reviewing the Examiner's remarks prepared in the Examiner's Answer.

Argument

This section is organized to correspond to the Response to Arguments section starting on page 7 of the Examiner's Answer and, together with the arguments in the Appeal Brief, constitutes the arguments of the Appellant.

(A)

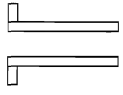
Claim 1 recites "a method of forming a catheter, comprising: providing a braid layer having a distal end and a proximal end, an inner lubricious liner positioned within the braid layer," "securing a first polymer segment over the braid layer" and "securing a second polymer segment over the braid layer." The Examiner contends that the term "over" as used in claim 1 can be broadly interpreted to include an axially abutting relationship as well as the radially overlapping interpretation that Appellants assert one of skill in the art would reasonable understand "over" to mean in this context.

In this instance, the context in which the term "over" is used cannot be ignored in defining its meaning. Claim 1 does not recite that the second polymer segment is placed over, for example, the catheter body, where reasonable interpretations might be more varied. Claim 1 recites that the second polymer segment is placed over the braid layer. In this context, "over" is understood to mean in a radially overlapping relationship.

The Examiner uses an example of an element placed over the end of a tube and provides two sketches, reproduced below, to illustrate the example:

(i) (ii)

The Examiner contends, correctly, that both figures depict an element placed over the end of a tube, even though in the first figure, the element "does not have any axial component relative to the pipe itself." However, here the context is the end of a tube. It is doubtful whether in this context the element in Figure 3, below, would be reasonably considered to be over the end of a tube:



(iii)

Whether this element could reasonably be considered to be over the end of the tube would depend on the accompanying description.

The following sketch illustrates the Examiner's position:

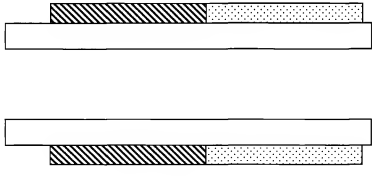


Figure (iv)

Supposing Figure (iv) to illustrate a catheter and the striped component to illustrate a braid layer, the Examiner contends that the dotted segment is over the braid layer, according to

the claim language. In the context of a catheter layer, this is not how one of skill in the art would reasonably interpret the term over. Over, in this context, is clearly understood to mean radially overlapping, of which the following sketch is an example:

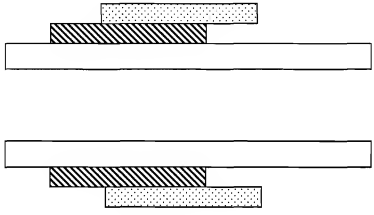


Figure (v)

In Figure (v), the dotted component can reasonably be said to be over the striped component. The Examiner argues that the claim does not require the second polymer segment to be in any particular relationship relative to an elongate central axis of the catheter. This is incorrect. The only referents that the catheter has are along the central axis of the catheter distally or proximally and toward or away from the central axis radially. The term "over" cannot be understood with reference to the proximal or distal directions. In Figure iv above, which illustrates the Examiner's position, it makes as much sense to say that the dotted component is under the striped component as to say that the dotted component is over the striped component. Where one component does not surround another, one component cannot be both over and under another; that would be a physical impossibility. Because "over" does not make sense with reference to the proximal or distal directions, the only context is toward or away from the central axis in a radial direction.

Appellants respectfully submit that one of skill in the art would reasonably understand "securing a second polymer segment over the braid layer" to mean that the second polymer segment is placed in a radially overlapping position further away from the central axis and secured, because this is the only sense in the context of this claim that makes sense. When "over" is interpreted permissibly, Noone does not disclose the method of claim 1.

(B)

(i)

In the Final Office Action of August 2, 2006, the Examiner argues with respect to claim 2 that it would have been obvious to substitute the material of Wilson for the second polymer segment of Noone in order that the first segment will not remelt upon application of the second polymer segment (distal tip 45 in Noone). In the Appeal Brief, Appellants pointed out that Noone is silent as to how the distal tip is joined, merely saying that the tip is joined in a manner well known in the art. The two most common joining methods are adhesives and welding. If using adhesives, having different melting temperatures of the first and second polymer segments is immaterial and if using welding, different melting temperatures may be counterproductive. In the Examiner's Answer of July 11, 2007, the Examiner argues that this is not persuasive because Wilson shows attaching tips to catheters using welding or fusion, citing column 4, lines 65-67 and column 7, lines 20-21.

However, the cited sections do not advance the Examiner's point. In column 4, line 65, Wilson recites "the adjacent axial sections are butt welded or fused together." Neither welding nor fusion is a process where different melt temperatures between the two materials to be joined are desirable. In column 7, lines 20-21, Wilson recites "a terminal tip 118 is also secured at the distal end of the catheter." This, too, does nothing to advance the Examiner's argument that there is motivation to use the material of Wilson in the distal tip of Noone.

With respect to claim 3, Appellants argued in the Appeal Brief that there is no motivation to modify the extrusion process of Noone to use heat shrink tubing as Wilson teaches because there is no apparent advantage to using heat shrink tubing to secure catheter segments together. The Examiner argues that the heat shrink tubing method of Wilson, where multiple segments are secured together in the same step is more efficient than a method where various polymer segments are secured sequentially. This, however, is not an accurate description of Noone. The correct comparison is not between securing preformed segments together simultaneously and securing preformed segments together sequentially, but between (as in Wilson) securing preformed segments together simultaneously and (as in Noone) simultaneously forming and securing segments sequentially through extrusion. Appellants can find no basis in either Wilson or Noone that the method of Wilson, which involves assembling preformed segments together in a heat shrink tube and then melting the segments together and removing the tube, is more

efficient than the continuous extrusion method of Noone. Appellants therefore respectfully maintain that there no motivation in the cited prior art to arrive at the method of claim 3.

Conclusion

For at least the reasons stated above and the additional reasons in the Appeal Brief, claims 1, 11, 13, and 35-41 are not anticipated by Noone et al, claims 2-5, 7 and 9-10 are not obvious over Noone et al. in view of Wilson, claim 6 is not obvious over Noone et al. in view of Wilson and Zadno-Azizi, and claim 8 is not obvious over Noone et al. in view of Ashiya et al., and the Examiner's rejections of claims these claims under 35 U.S.C. §§ 102 and 103 should be overruled.

Respectfully submitted,

Pu Zhou

By his Attorney,

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